

CLAIMS

- 1           1.     A seismic cable, comprising:  
2           a support cable;  
3           a signal cable attached to the support cable at a plurality of points spaced along the  
4           length of the signal cable; and  
5           at least one sensor module disposed on the signal cable.
- 1           2.     The seismic cable of claim 1, further comprising a first sheath enclosing the  
2           support cable and the signal cable.
- 1           3.     The seismic cable of claim 2, wherein the first sheath comprises at least one of  
2           is a skin, a jacket or an extrusion matrix.
- 1           4.     The seismic cable of claim 1, wherein the support cable includes a plurality of  
2           strengthening members.
- 1           5.     The seismic cable of claim 4, wherein the strengthening members are cabled  
2           by a second sheath.
- 1           6.     The seismic cable of claim 1, wherein the support cable includes at least one  
2           of a signal lead and a power lead.
- 1           7.     The seismic cable of claim 6, further comprising an electronics module  
2           powered over the power lead and capable of transmitting data over the signal lead.
- 1           8.     The seismic cable of claim 7, wherein the support cable is sectioned.

1           9.     The seismic cable of claim 1, wherein the signal cable includes a plurality of  
2     leads cabled by a third sheath.

1           10.    The seismic cable of claim 1, wherein the signal cable includes at least one  
2     strengthening member.

1           11.    The seismic cable of claim 1, further comprising a plurality of sensor modules  
2     electrically connected to the signal cable.

1           12.    The seismic cable of claim 1, wherein the sensor modules transmit data and  
2     receive power over the signal cable.

1           13.    The seismic cable of claim 1, further comprising:  
2     a plurality of sensor modules electrically connected to and distributed along the signal  
3     cable; and  
4     a plurality of electronics modules by which the signal cable is attached to the support  
5     cable at the points.

1           14.    The seismic cable of claim 1, wherein the electronics modules are electrically  
2     connected to the signal cable at the points and mechanically connected to the support cable.

1           15.    The seismic cable of claim 1, wherein the signal cable is attached to the  
2     support cable by a zipper mechanism.

1           16     The seismic cable of claim 1, wherein the plurality of points are spaced along  
2     the length of the signal cable in proportion to a length of the sensor module.

1           17.    The seismic cable of claim 16, wherein the plurality of points are positioned  
2     between adjacent sensor modules

1           18.    The seismic cable of claim 16, wherein the separations are created by pulling a  
2    rip cord fabricated in the seismic cable to detach the signal cable from the support cable.

1           19.    The seismic cable of claim 1, further comprising a plurality of arms  
2    mechanically affixed to the support cable and rotationally connected to the signal cable to  
3    attach the signal cable to the support cable at the points.

1           20.    The seismic cable of claim 19, wherein the arms are at least one of rigid and  
2    semi-rigid arms.

1           21.    The seismic cable of claim 19, wherein the arms are mechanically fixed by a  
2    plurality of clamps.

1           22.    The seismic cable of claim 19, wherein the arms are rotationally connected by  
2    a bearing.

1           23.    The seismic cable of claim 19, further comprising a plurality of stops  
2    restraining movement of the rotational connection along the length of the signal cable.

1           24.    The seismic cable of claim 1, further comprising a plurality of sensor modules  
2    electrically connected to and distributed along the signal cable and by which the support  
3    cable and the signal cable are joined.

1           25.    The seismic cable of 24, wherein the support cable passes through a groove in  
2    the sensor modules.

1           26.    The seismic cable of claim 1, wherein each of the sensor modules comprises a  
2    housing defining a groove therethrough through which the support cable runs.

1           27.    The seismic cable of claim 26, wherein the support cable is acoustically  
2    decoupled from the housing by a plurality of elastic devices.

1           28.    The seismic cable of claim 26, wherein the support cable is acoustically  
2    decoupled from the housing by freely moving through the groove relative to the sensor  
3    module.

1           29.    A method for assembling a seismic cable, comprising attaching a support  
2    cable to a signal cable at a plurality of points spaced along the length thereof.

1           30.    The method of claim 29, wherein attaching the support cable to the signal  
2    cable includes mechanically connecting an electronics module to the support cable and  
3    electrically connecting the electronics module to the signal cable.

1           31.    The method of claim 29, wherein attaching the support cable to the signal  
2    cable includes zipping the signal cable to the support cable at the points.

1           32.    The method of claim 29, wherein attaching the support cable to the signal  
2    cable includes separating the support cable and the signal cable between the points.

1           33.    The method of claim 32, wherein separating the support cable and the signal  
2    cable includes pulling a rip-cord.

1           34.    The method of claim 29, wherein attaching the support cable to the sensor  
2    includes mechanically affixing at least one of a rigid and a semi-rigid arm to the support  
3    cable and rotationally connecting the respective rigid or semi-rigid arm to the signal cable at  
4    each of the points.

- 1           35.    The method of claim 29, wherein attaching the support cable to the signal  
2 cable includes connecting the support cable to the signal cable by a plurality of sensor  
3 modules.